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EXAMINER

MOMPER, ANNA M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,227	Applicant(s) BALDOVINO ET AL.	
	Examiner ANNA MOMPER	Art Unit 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,11-31,35-51,53-76,78-82 and 86-99 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-7, 11-31, 35-51, 53-76, 78-82, 86-99 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Amendment to the claims received 8/16/2010 has been entered. Claims 1, 25, 51, and 72 have been amended. Claims 2, 8-10, 32-34, 52, 77, 83-85 have been listed as "Withdrawn" however as the entire claim language has been crossed out, these claims are being considered as canceled.
2. It is noted that the amendments have not addressed the previously made claim objections or rejections under 112, 2nd paragraph. Therefore they have been repeated below.

Response to Arguments

3. It is noted that the arguments have not addressed the previously made claim objections or rejections under 112, 2nd paragraph. Therefore they have been repeated below.
4. Applicant's arguments filed 8/16/2010 have been fully considered but they are not persuasive.

With regards to the evidence in the specification with regards to the argument of unexpected result. The examiner maintains that the evidence as provided in the specification, while showing that a belt with glass cords has a shorter life than one having glass and carbon when used in oil, the examiner feels that an increase in life would be expected between the glass and the glass and carbon combo due to the different material properties of the carbon, and that sufficient evidence to show unexpected results in an oil environment specifically have not been yet provided.

Art Unit: 3657

Applicant argues that the secondary reference, Danhauer, is non analogous art and that the motivation for the combination supplied in the reference is unrelated to the current invention. The examiner first notes that the motivation to combine references need not be the same as that of the instant application in order to render the claimed invention obvious over the prior art. With regards to the non-analogous argument, applicant argues that Danhauer is directed to a power transmission belt which transmits power through friction and the operation of the belt in any environment including a friction reducing element such as oil would be contrary to one of ordinary skill in the art's understanding of the belt and would not have been directed to v-ribbed belts for the reason that operation in an oil-wet environment is contrary to the method of operation of V-belts. The examiner disagrees. While one of ordinary skill in the art may not be inclined to use the belt of Danhauer in an oil-wet environment, one of ordinary skill in the art at the time of the invention would understand that the resistant inserts of Danhauer provide the same function as those in Cicognani and any other elastomeric belt, no matter the environment the belt is intended to be used in, and one of ordinary skill in the art looking to improve the belt of Cicognani would find it obvious to take the teachings of Danhauer to improve the resistant inserts of Cicognani. Further, as Cicognani is not focused on the resistant inserts for the disclosure as the inventive concept is not particularly drawn to the resistant inserts, one of ordinary skill in the art looking to apply Cicognani would find it obvious to seek guidance with regards to the resistant inserts, guidance such as provided by Danhauer.

As per the arguments directed towards the claim recitation "the first material comprises glass fibers and the second material comprises carbon fibers". Applicant argues that The disclosure of "The cords 22 may be made from glass fiber, carbon fiber, steel, polyester, high tenacity rayon, polyaramide, or a blend of any of these materials" does not provide sufficient disclosure for teaching specifically a first material being glass fiber and a second material being carbon fiber. The examiner disagrees. Firstly, the MPEP 2131.02 [R-6] recites

when the species is clearly named, the species claim is anticipated no matter how many other species are additionally named. Ex parte A, 17 USPQ2d 1716

Therefore as Danhauer discloses a blend of the materials as being a disclosed species, the species is sufficiently disclosed to render the first material being glass and the second material being carbon fiber as being obvious. Secondly, Danhauer only discloses a limited number of materials making "a blend of any of these materials" limited in the number of possible solutions, making it at the very least obvious for one of ordinary skill in the art to try the combination.

As per the arguments that Danhauer fails to disclose the first material at least partially covers the second material. The examiner disagrees. Danhauer discloses the cords being helically wound. To achieve this helical twist one of ordinary skill in the art would take a plurality of fibers or threads and hold them in parallel relation. In this parallel relation these fibers or threads will touch. Then one either holds one end stationary and provides an angular rotation to the second end or provides an angular

Art Unit: 3657

rotation in opposite directions at each end to create a helical twist. While it is understood that the applicant is intending to recite the feature of Figure 5 with respect to the different materials, it is noted that the touching of one thread to another makes the first "at least partially cover" the second, and in this way, the helical winding of Danhauer recites the first material "at least partially covers the second material" as required by the claims.

Claim Objections

5. Claim 76 is objected to because of the following informalities:

Claim 76 recites "a temperature of approximately 284°C". This appears to be a typo and should read "a temperature of approximately 284°F" as the specification discloses "140°C" which converts to 284°F.

Claim 98 and claim 99 are require the same claim limitations and the same claim dependency and are therefore duplicates of each other. One claim should be amended or cancelled.

Claim 26 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3657

7. Claims 3, 53, 71, 75, 78 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 71 requires "the toothed belt is configured to replace a chain in a timing control system without any dimensional variations being made to the timing control system" it is unclear what structural limitations this recitation requires and therefore unclear as to the scope of the claim.

Claim 75 recites "the oil transport system" is unclear as to what is required by this claim as no oil transport system is disclosed in the claim or in the parent claim.

Claim 3 recites a dependency on claim 2 which has been canceled therefore it is unclear as to the scope of claim 3.

Claim 53 recites a dependency on claim 52 which has been canceled, therefore it is unclear as to the scope of claim 53.

Claim 78 recites a dependency on claim 77 which has been canceled, therefore it is unclear as to the scope of claim 78.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3657

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claim 1, 4, 25-26, 28, 46, 51, 54, and 71-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US 2002/0098935 A1).

As per claim 1, Cicognani et al. discloses a toothed belt (Fig) for use with oil (Col. 1, Ln. 29-40, Col. 2, Ln. 55-61), the belt comprising:

Art Unit: 3657

a body (1),

a plurality of teeth (3, Col. 2, Ln. 3-5) extending from a first surface of said body (Fig.), said teeth being coated by a first fabric (6), and

a plurality of resistant inserts (2) made from flexible and inextensible materials such as fiberglass, steel and the like (Col. 2, Ln. 1-2);

wherein said toothed belt is adapted to operate in substantially continuous contact with or partially immersed in oil (Col. 1, Ln. 29-40, Col. 2, Ln. 55-61).

Cicognani et al. fails to explicitly disclose the resistant inserts comprise fibers produced from at least a first and second material, the first material being glass fibers and the second material being carbon fibers and the first material at least partially covering the second material.

Danhauer et al. discloses a belt (10) having a body (12, 14, 16) and a plurality of resistant inserts (22), wherein the resistant inserts are produced from at least a first and a second material ([0019]), wherein the materials are made from glass fiber, carbon fiber, steel, polyester, rayon, polyaramide, or a blend of any of those above and the inserts being helically wound ([0019], the two materials are helically wound together, thus the first material will at least partly cover the second material).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Cicognani et al. to include the resistant inserts comprise fibers produced from at least a first and second material, wherein the first and second materials are chosen from glass and carbon fibers, as taught by Danhauer et al., for the purpose of producing a desired balance of strength and flexibility in the resistant inserts.

Art Unit: 3657

As per claims 25-26, Cicognani et al. discloses a timing control system for a motor vehicle (Col. 1, Ln. 4-5, Ln. 29-40) comprising at least one driving pulley, one driven pulley and a toothed belt (Col. 2, Ln. 54-58) adapted for use in substantially continuous contact with oil or partially immersed in oil, and materials for maintaining said toothed belt in an oil wet condition (Col. 2, Ln. 55-61, Col. 3, Ln. 12-20);

said belt comprising a body (1), and

one or more teeth (3, Col. 2, Ln. 3-5) extending from a first surface of said body (Fig.), said teeth being coated by a first fabric (6), and

a plurality of resistant inserts (2) made from flexible and inextensible materials such as fiberglass, steel and the like (Col. 2, Ln. 1-2);

Cicognani et al. fails to explicitly disclose the resistant inserts comprise fibers produced from at least a first and second material, the first material being glass fibers and the second material being carbon fibers and the first material at least partially covering the second material.

Danhauer et al. discloses a belt (10) having a body (12, 14, 16) and a plurality of resistant inserts (22), wherein the resistant inserts are produced from at least a first and a second material ([0019]), wherein the materials are made from glass fiber, carbon fiber, steel, polyester, rayon, polyaramide, or a blend of any of those above and the inserts being helically wound ([0019], the two materials are helically wound together, thus the first material will at least partly cover the second material).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Cicognani et al. to include the resistant inserts comprise

Art Unit: 3657

fibers produced from at least a first and second material, wherein the first and second materials are chosen from glass and carbon fibers, as taught by Danhauer et al., for the purpose of producing a desired balance of strength and flexibility in the resistant inserts.

As per claim 51, Cicognani et al. discloses a toothed belt (Fig) adapted for use in substantially continuous contact with oil or partially immersed in oil (Col. 1, Ln. 29-40, Col. 2, Ln. 55-61), the belt comprising:

- a body (1),

- a plurality of teeth (3, Col. 2, Ln. 3-5) extending from a first surface of said body (Fig.), said teeth being coated by a first fabric (6), and

- a plurality of resistant inserts (2) made from flexible and inextensible materials such as fiberglass, steel and the like (Col. 2, Ln. 1-2);

wherein said toothed belt is adapted to operate in substantially continuous contact with or partially immersed in oil (Col. 1, Ln. 29-40, Col. 2, Ln. 55-61).

Cicognani et al. fails to explicitly disclose the resistant inserts comprise fibers produced from at least a first and second material, the first material being glass fibers and the second material being carbon fibers and the first material at least partially covering the second material.

Danhauer et al. discloses a belt (10) having a body (12, 14, 16) and a plurality of resistant inserts (22), wherein the resistant inserts are produced from at least a first and a second material ([0019]), wherein the materials are made from glass fiber, carbon fiber, steel, polyester, rayon, polyaramide, or a blend of any of those above and the

Art Unit: 3657

inserts being helically wound ([0019], the two materials are helically wound together, thus the first material will at least partly cover the second material).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Cicognani et al. to include the resistant inserts comprise fibers produced from at least a first and second material, wherein the first and second materials are chosen from glass and carbon fibers respectively, as taught by Danhauer et al., for the purpose of producing a desired balance of strength and flexibility in the resistant inserts.

As per claims 72 and 83, Cicognani et al. discloses a method for providing a belt for use with oil comprising :

providing an oil-wet environment (Col. 2, Ln. 59-61),

providing a toothed belt to operate in said oil-wet environment (Col. 2, Ln. 55-61),
said belt comprising:

a body (1),

a plurality of teeth (3, Col. 2, Ln. 3-5) extending from a first surface of said body (Fig.), said teeth being coated by a first fabric (6), and

a plurality of resistant inserts (2) made from flexible and inextensible materials such as fiberglass, steel and the like (Col. 2, Ln. 1-2);

wherein said toothed belt is adapted to operate in substantially continuous contact with or partially immersed in oil (Col. 1, Ln. 29-40, Col. 2, Ln. 55-61).

Cicognani et al. fails to explicitly disclose the resistant inserts comprise fibers produced from at least a first and second material, the first material being glass fibers

Art Unit: 3657

and the second material being carbon fibers and the first material at least partially covering the second material.

Danhauer et al. discloses a belt (10) having a body (12, 14, 16) and a plurality of resistant inserts (22), wherein the resistant inserts are produced from at least a first and a second material ([0019]), wherein the materials are made from glass fiber, carbon fiber, steel, polyester, rayon, polyaramide, or a blend of any of those above and the inserts being helically wound ([0019], the two materials are helically wound together, thus the first material will at least partly cover the second material).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Cicognani et al. to include the resistant inserts comprise fibers produced from at least a first and second material, wherein the first and second materials are chosen from glass and carbon fibers, as taught by Danhauer et al., for the purpose of producing a desired balance of strength and flexibility in the resistant inserts.

As per claim 4, 28, 54, and 79, Danhauer et al. discloses the first material is glass fiber and the second material is carbon fiber ([0019]) such that the first material has a lower modulus with respect to the second material.

As per claims 46, Danhauer et al. further discloses the use of discrete fibers in the elastomeric material ([0026]).

As per claim 71, Cicognani et al. discloses the toothed belt is configured to replace a chain in a timing control system without any dimensional variations being made to the timing control system (Col. 1, Ln. 34-40).

As per claims 73 and 75, Cicognani et al. discloses the belt coming in contact with the belt, and a pump for use in circulating the oil, however fails to explicitly disclose the use of an oil spray or the application of such being at a rate of approximately 5.8 gallons/hr. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Cicognani et al. to include an oil spray and to apply said oil spray at a rate of approximately 5.8, as the use of such is a design choice of which one of ordinary skill in the art at the time of the invention would be capable of based on the system requirements.

As per claim 74, Cicognani et al. further discloses the oil-wet environment comprises an oil bath (Col. 2, Ln. 59-61).

As per claim 76, Cicognani et al. further discloses the oil being at 140°C which converts to 284° F (Col. 3, Ln. 1-5).

13. Claims 3, 27, 53, and 78-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US 2002/0098935 A1) and further in view of Onoe et al. (JP 02-248741 A1).

Modified Cicognani et al. fails to explicitly disclose the first material entirely surrounds the second material.

Onoe et al. discloses a belt having a rubber body (1) and a plurality of toothed sections (2) and a plurality of reinforcement cords (4) buried in the belt and disposed parallel to the belt width direction in the rubber body (1), and wherein each reinforcement cord (4) is made with core section (5) made out of a no-twist fiber bundle and a shell section (6) disposed on the periphery of the core section and having a twist

Art Unit: 3657

angle greater than that of the core section such that stress concentrations are eliminated and the durability of the belt is improved.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Cicognani et al. to include the first material entirely surrounds the second material, as taught by Onoe et al. for the purpose of increasing durability and reducing stress concentrations

As per claim 79, Danhauer et al. discloses the first material is glass fiber and the second material is carbon fiber ([0019]) such that the first material has a lower modulus with respect to the second material.

14. Claim 5-7, 29-31, 55-57 and 80-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US 2002/0098935 A1) and further in view of Mashimo et al. (US 4,498,891).

Modified Cicognani et al. fails to explicitly disclose the second material occupies a surface between 15 and 75% (claims 5, 29, 55, 80) or preferably between 35 and 45 % (claims 6, 30, 56, 81) of the total surface of the body, and the resistant inserts have two twists in the same direction (claims 7, 31, 82, 57).

Mashimo et al. discloses a belt (Fig. 1, Fig. 2) having resistant inserts (16) being woven in the type of Lang's twist (Col. 2, Ln. 60-64) and occupying a surface between 35 and 45% of the total (Table 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Modified Cicognani al. to include the second material occupies a surface of between 15 and 75% and between 35 and 45 % of the total

Art Unit: 3657

surface of the body, and the resistant inserts have two twists in the same direction, as taught by Mashimo et al., for the purpose of providing stiffness to the belt.

15. Claims 11-12, 35-36, 58-59, and 86-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US 2002/0098935 A1) and further in view of Knutson (US 6,945,891).

Modified Cicognani et al. discloses all elements of the claimed invention as disclosed in claim 1 above, but fails to explicitly disclose the resistant inserts have been treated with an RFL comprising a latex (claim 11, 35, 58, 86) which comprises an elastomeric material formed from a copolymer obtained from a diene monomer and a monomer containing nitrile groups (claim 12, 36, 59, 87).

Knutson discloses a power transmission belt (10) in which tensile fibers (18) of carbon are coated with an RFL composition (Col. 6, Ln. 8-23) wherein the RFL composition comprises a latex which comprises the copolymer HNBR (Col. 6, Ln. 45-60).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Modified Cicognani et al. to include the resistant inserts have been treated with an RFL comprising a latex which comprises an elastomeric material formed from a copolymer obtained from a diene monomer and a monomer containing nitrile groups, as taught by Knutson, for the purpose of ensuring adhesion of the resistant inserts to the belt.

16. Claims 13-14, 37-38, 60-61 and 88-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US

Art Unit: 3657

2002/0098935 A1) and Knutson (US 6,945,891), as applied to claim 12 above, and further in view of Acten (US 7,396,884 B2).

Modified Cicognani et al. fails to explicitly disclose the nitrile groups are in a percentage between 33 and 49 weight % of the final copolymer (claim 13, 37, 60, 88) or preferably 39 weight % (claims 14, 38, 61, 89).

Acten discloses an adhesive base for reinforcing materials (Col. 1, Ln. 16-20) containing HNBR wherein the nitrile group content is in the range of 10 to 50 wt. % or preferably 15 to 39 wt. %.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Modified Cicognani et al. to include the nitrile groups are in a percentage between 33 and 49 weight % of the final copolymer, or preferably 39 weight %, as taught by Acten, for the purpose of ensuring adhesion of the resistant inserts to the belt.

17. Claims 15-18, 22, 39-42, 50, 62-65, and 90-93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US 2002/0098935 A1) and further in view of Osaka et al. (US 7,056,249 B1).

As per claims 15, 17-18, 39, 41-42, 50, 62, 64-65, 90, and 92-93 Cicognani et al. further discloses the fabric is externally coated by a resistant layer wherein the resistant layer comprises an oil resistant elastomer (Col. 2, Ln. 6-10). Modified Cicognani et al. fails to explicitly disclose the resistant layer comprises a fluorinated elastomer, specifically polytetrafluoroethylene (claims 18, 42, 65, 93) in an amount between 101

Art Unit: 3657

and 150 parts per weight with the elastomeric material (claims 17, 41, 50, 64, 92), and a vulcanizing agent.

Osaka et al. discloses a belt (10) having a fabric layer (24, 56) coated by a resistance layer (40) of polytetrafluoroethylene (Col. 6, Ln. 26-32) in an amount of 30 to 200 parts per weight of a first elastomeric material (36, Col. 6, Ln. 7-12, Ln. 43-46).

Osaka et al. fails to explicitly disclose the use of a vulcanizing agent, however Osaka et al. discloses the step of vulcanizing after the treatment of the fabric (Col. 8, Ln. 44-50), however it would have been known by one in the art that a vulcanizing agent could be used to speed up vulcanization.

It would have been obvious to one of ordinary skill in the art at the time of the time of the invention to modify the belt of Modified Cicognani et al. to include a resistant layer of polytetrafluoroethylene in an amount between 101 and 150 parts per weight of a first elastomeric material and a vulcanizing agent for the purpose of reducing friction.

As per claims 16, 40, 63, and 91 Cicognani et al. discloses the belt body being made of an oil resistant elastomeric composition but fails to explicitly disclose the body comprises a mixture based on a second elastomeric material formed from a copolymer obtained from a diene monomer and a monomer containing nitrile groups.

Danhauer et al. further discloses the body (12) comprises a mixture based on a second elastomeric material formed from a copolymer obtained from a diene monomer and a monomer containing nitrile groups ([0018], NBR- nitrile butadiene rubber).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Modified Cicognani et al. to further include the body

Art Unit: 3657

comprises a mixture based on a second elastomeric material formed from a copolymer obtained from a diene monomer and a monomer containing nitrile groups, as taught by Danhauer et al., for the purpose of selecting an appropriate material and properties for a chosen application of the belt.

As per claim 22, Danhauer et al. further discloses the use of discrete fibers in the elastomeric material ([0026]).

18. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US 2002/0098935 A1) and further in view of Mashimo et al. (US 4,498,891).

As per claims 43, Modified Cicognani et al. fails to explicitly disclose the use of a second fabric on the back of the belt body.

Mashimo et al. discloses a belt (Fig. 1, Fig. 2) having resistant inserts (16) being and the use of a fabric (14) located on the back of the surface of the belt body (11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Modified Cicognani et al. to include a second fabric on the backing of the belt, as taught by Mashimo et al., for the purpose of protecting the belt body.

19. Claims 19-21, 44-45, 66-69 and 94-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US 2002/0098935 A1) and Osaka et al. (US 7,056,249 B1) and further in view of Mashimo et al. (US 4,498,891).

As per claims 19, 66 and 94, Modified Cicognani et al. fails to explicitly disclose the use of a second fabric on the back of the belt body.

Mashimo et al. discloses a belt (Fig. 1, Fig. 2) having resistant inserts (16) being and the use of a fabric (14) located on the back of the surface of the belt body (11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Modified Cicognani et al. to include a second fabric on the backing of the belt, as taught by Mashimo et al., for the purpose of protecting the belt body.

As per claims 20-21, 44-45, 67-68, and 95-96 Osaka et al. discloses a belt (10) having a fabric layer (24, 56) coated by a resistance layer (40) of polytetrafluoroethylene (Col. 6, Ln. 26-32) to reduce friction.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Modified Cicognani et al. to include the fabric on the back surface of the belt body to also be coated by a resistance layer of polytetrafluoroethylene, as taught by Osaka et al., for the purpose of reducing friction.

As per claims 69 and 97, Danhauer et al. further discloses the use of discrete fibers in the elastomeric material ([0026])

20. Claims 23 and 98-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US 2002/0098935 A1) and Osaka et al. (US 7,056,249 B1) and Mashimo et al. (US 4,498,891) and further in view of Knutson (US 6,945,891).

Art Unit: 3657

Modified Cicognani et al. fails to explicitly disclose the fibers are present in an amount in weight between 0.5 and 15% with respect to said elastomeric material.

Knutson et al. discloses a power transmission belt (10) having of discrete fibers in the elastomeric material (Col. 4, Ln. 7-25) in the range of about 0.5 to 20 phr with respect to the elastomeric material (Col. 4, Ln. 7-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Modified Cicognani et al. to include the fibers are present in an amount in weight between 0.5 and 15% with respect to said elastomeric material, as taught by Knutson et al., for the purpose of increasing strength of the belt.

21. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US 2002/0098935 A1) and further in view of Knutson (US 6,945,891).

Modified Cicognani et al. fails to explicitly disclose the fibers are present in an amount in weight between 0.5 and 15% with respect to said elastomeric material.

Knutson et al. discloses a power transmission belt (10) having of discrete fibers in the elastomeric material (Col. 4, Ln. 7-25) in the range of about 0.5 to 20 phr with respect to the elastomeric material (Col. 4, Ln. 7-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Modified Cicognani et al. to include the fibers are present in an amount in weight between 0.5 and 15% with respect to said elastomeric material, as taught by Knutson et al., for the purpose of increasing strength of the belt.

Art Unit: 3657

22. Claims 24, 48, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US 2002/0098935 A1) and further in view of Nakajima et al. (US 5,306,213).

Modified Cicognani et al. fails to explicitly disclose the belt being treated with a polymer resistant to swelling between the toothings and the back side.

Nakajima et al. discloses a toothed belt (30) in which a rubber layer (14) being made of an oil-resistant rubber composition different from that of the belt body (12) in order to prevent swelling of the belt.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Modified Cicognani et al. to include the belt treated with a polymer resistant to swelling, as taught by Nakajima et al., for the purpose of increasing the life of the belt.

23. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cicognani et al. (US 4,099,422) in view of Danhauer et al. (US 2002/0098935 A1) and Nakajima et al. (US 5,306,213), and further in view of Hashimoto et al. (US 2004/0127316 A1).

Modified Welk et al. discloses all elements of the claimed invention as applied to claim 25 above, but fail to explicitly disclose a pad tensioner or a pad.

Hashimoto et al. discloses a pad tensioner (100, TL) and a pad (TG) for use in imparting tension on a timing belt of a power transmission system in a vehicle ([0001], [0008]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt power transmission system of Modified Welk et al. to include a pad or pad tensioner, as taught by Hashimoto et al., for the purpose of maintaining tension in the belt.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNA MOMPER whose telephone number is (571)270-5788. The examiner can normally be reached on M-F 6:00-3:30 (First Friday Off).

Art Unit: 3657

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

am

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